

Work Order ID 133918

Tuesday, June 23, 2015 3:14:51 PM

133918

Page 1

Item ID: D5203-1 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Strut
 Start Date: 6/23/15 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 6/23/15 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: MLS Date: JUN 24 2015 Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
 Run Start ***NR1***
 Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D5203	A								

110 0.00
110 Small Fab 1 FF JUN 29 2015
 Large Fab Memo 0.00
 Large Fab 1- Cut to length
 2- Chamfer ends as per dwg
 3- Deburr

120 0.00
120 QC6- Inspect dimensions to drawing (2) 38
 QC Memo 0.00 9-89
 Quality Control SEP 18 2015

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 133918

133918

Page 2

Tuesday, June 23, 2015 3:14:51 PM

Item ID: D5203-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Strut

Start Date: 6/23/15

Start Qty: 1.00

1

Cust Item ID:

Required Date: 6/23/15

Req'd Qty: 1.00

1

Customer:

Reference:

Run Start *NR1*

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop *NR2*

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

Identify as per dwg & Stock Location:

S1360

0.00

130

Packaging

Memo

0.00

Packaging

SEP 22 2015

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

SEP 22 2015

S120150922

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Tuesday, June 23, 2015 3:14:50 PM

Page 1

Work Order ID: 133918

133918

Parent Item: D5203-1

D5203-1

Parent Item Name: Strut

Start Date: 6/23/15

Required Date: 6/23/15

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 15.01.08 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M304TR0.500W.049

Purchased

No

f

245.3220

3

M304TR0 500W 049

FF

JUN 29 2015

304 RD Tube .500 x .049W

Location

Loc Qty

Loc Code

GA002

245.322

M127937

11

M128833

234.317

M130999

0.005

1132872

DQA: _____ Date: _____



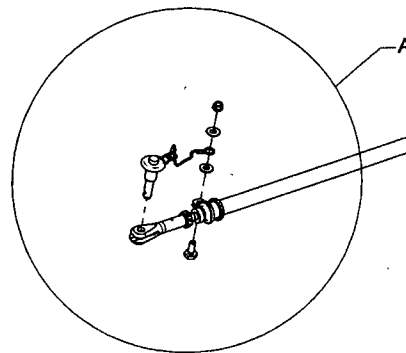
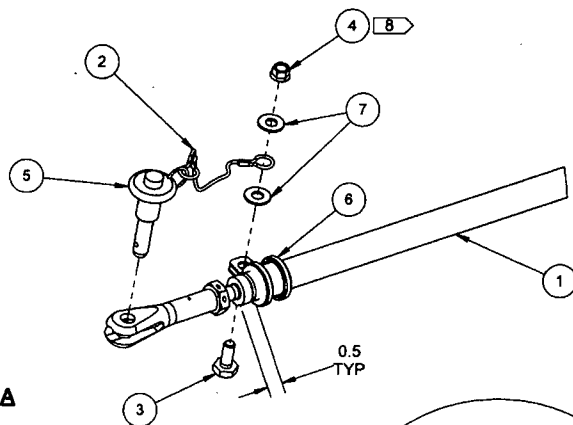
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

DETAIL A



D5203-041 STRUT ASSEMBLY

ITEM	QTY	P/N	DESCRIPTION
	X	D5203-041	STRUT ASSEMBLY
1	1	D5203-045	STRUT WELDMENT
2	2	D2690-6	LANYARD ASSEMBLY
3	2	AN3C3A	BOLT
4	2	MS21043-3	NUT, SELF-LOCKING
5	2	MS17984-C405	PIN, QUICK RELEASE (NASM17984-C405)
6	2	MS21919WCF8	CLAMP
7	4	NAS1149C0332R	WASHER

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 133918 MLS
150624

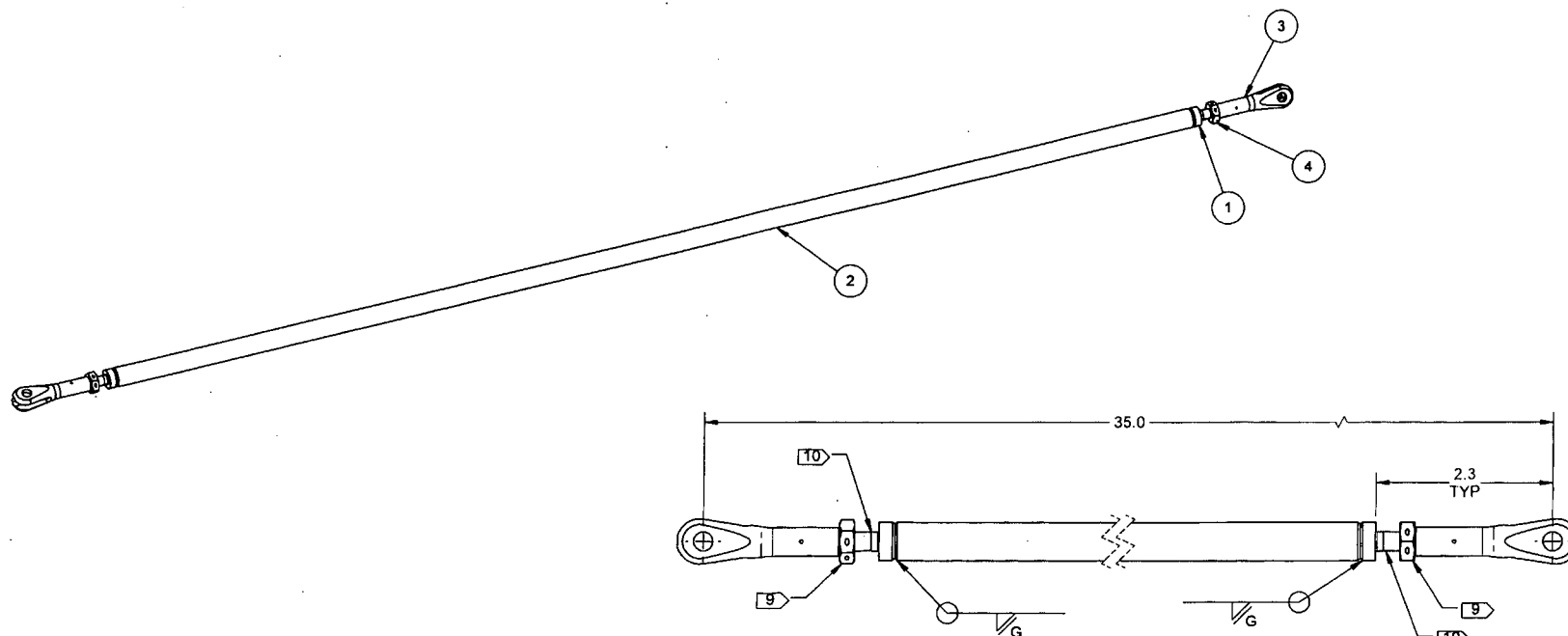
RELEASED

2015 JAN 29
ECN 15-508 4P

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 - 7) WEIGHT: 0.95 lbs
 - 8) TORQUE NUTS TO 20-25 in-lb

A	NEW ISSUE	RF	14.12.19
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO.	REV. A
MFG. APPR.	DD	D5203	SHEET 1 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
DATE	14.12.19	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

ITEM	QTY -045	P/N	DESCRIPTION
	X	D5203-045	STRUT WELDMENT
1	2	D4794-3	STUD
2	1	D5203-1	STRUT
3	2	AN665-34R	THREADED CLEVIS
4	2	NAS509-4C	NUT, JAM



D5203-045 STRUT WELDMENT

RELEASED

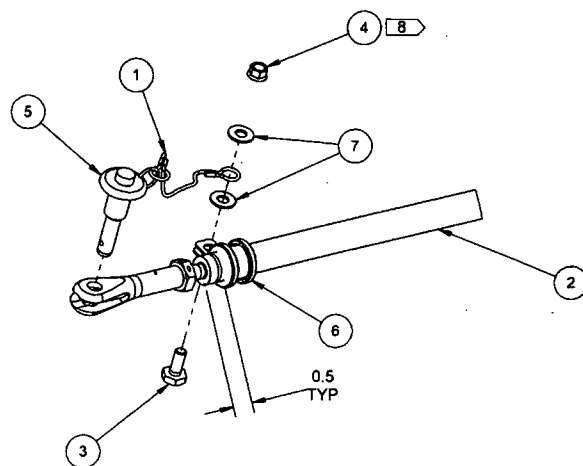
2015 JAN 29 *up*

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.82 lbs
- 8) WELD PER DART QSI 004
- 9) HAND TIGHTEN NAS509-4C NUT
- 10) USE TECTYL 502C CLASS I, MIL-PRF-16173E GRADE 2 OR EQUIVALENT ANTI-SEIZE COMPOUND ON THREAD

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO.	REV. A
MFG. APPR.	DD	D5203	SHEET 2 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
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DETAIL B

D5203-043 STRUT ASSEMBLY

ITEM	QTY -043	P/N	DESCRIPTION
	X	D5203-043	STRUT ASSEMBLY
1	2	D2690-6	LANYARD ASSEMBLY
2	1	D5203-047	STRUT WELDMENT
3	2	AN3C3A	BOLT
4	2	MS21043-3	NUT, SELF-LOCKING
5	2	MS17984-C405	PIN, QUICK RELEASE (NASM17984-C405)
6	2	MS21919WCF8	CLAMP
7	4	NAS1149C0332R	WASHER

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.19 lbs
- 8) TORQUE NUTS TO 20-25 in-lb

RELEASED

2015 JAN 29 *ap*

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO.	REV. A
MFG. APPR.	DD	D5203	SHEET 3 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
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0.030 x 45°
CHAMFER
2 PL

Ø

30.07

Ø 0.500
REF

0.049
REF

D5203-1 STRUT

RELEASED

2015 JAN 29 *ap*

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING
PER ASTM A213 OR ASME SA213 OR ASTM S269
REF DART SPEC M304TR0.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.60 lbs

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO.	REV. A
MFG. APPR.	DD	D5203	SHEET 5 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
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0.030 x 45°
CHAMFER
2 PL

Ø

42.00

Ø0.500
REF

0.049
REF

D5203-3 STRUT

RELEASED

2015 JAN 29 *97*

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING
PER ASTM A213 OR ASME SA213 OR ASTM S269
REF DART SPEC M304TR0.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.84 lbs

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO.	REV. A
MFG. APPR.	DD	D5203	SHEET 6 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
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